Solutia Inc.
a subsidiary of Eastman Chemical Company
575 Maryville Centre Drive
St. Louis, MO 63141
USA

EASTMAN

Transmitted via email

May 17, 2022

Ms. Emmie McCleary
United States Environmental Protection Agency - Region 5
77 W. Jackson Boulevard
Mail Code SR-6J
Chicago, Illinois 60604-3507
McCleary.Emily@epa.gov

Re: Revised Work Plan for NAPL Recovery Well Installation
Sauget Area 2 Superfund Site, Site P
Sauget, Illinois
Consent Decree 19-231-SMY-RJD

Dear Ms. McCleary:

Pursuant to U.S. EPA's May 13, 2022 conditional approval and required revisions to Solutia's Site P NAPL Recovery Well Installation Work Plan, please find attached a revised work plan incorporating the U.S. EPA comments. As we have discussed, installation activities are scheduled for May 23.

Please contact me at (314) 674-1161 or wgjohn@eastman.com if you have any questions or require additional information.

Sincerely,

William G. Johnson
Project Coordinator

cc by email:

Viral Patel – U.S. EPA
Brian Conrath – Illinois EPA
Carol Nissen – HelioTech JV
Mike Wagstaff, Ameren
Eric Hoglund, GHD
Chris Redington – Golder Associates

TECHNICAL MEMORANDUM

DATE May 17, 2022 **Project No.** 31404150

TO Mr. Bill Johnson
Solutia Inc.

FROM Rahel Pommerenke, Chris Redington **EMAIL credington@golder.com**

WORK PLAN FOR NAPL RECOVERY WELL INSTALLATION, SOLUTIA SAUGET AREA 2, SITE P, SAUGET, ILLINOIS

Golder Associates USA Inc. (Golder), a member of WSP, was retained by Solutia Inc. (Solutia) to provide a Work Plan for the installation of a replacement non-aqueous phase liquid (NAPL) recovery well adjacent to the abandoned well LEACH-P-1 at Site P, Sauget Area (SA2) in Sauget, Illinois (the Site). This Work Plan has been prepared in general accordance with the NAPL Recovery System 30 Percent Design, prepared by Golder and dated October 18, 2019, that was reviewed and commented on by the United States Environmental Protection Agency (USEPA) as part of the GHD Site P Specific Project Remedial Design Work Plan (SPRDWP), and recent discussions between Golder and Solutia.

1.0 INTRODUCTION AND BACKGROUND

According to the December 2013 Record of Decision (ROD), Site P was operated by Sauget and Company from 1973 to approximately 1984 as an Illinois Environmental Protection Agency (IEPA)-permitted landfill and was used for the disposal of municipal and industrial waste, including diatomaceous-earth filter cake. It was estimated to contain approximately one million cubic yards of soil and waste. The Site is currently inactive and covered with an engineered soil cap. Access to the Site is unrestricted, and a nightclub and asphalt parking lot occupy approximately three acres in the southeast section of the Site.

NAPL was identified as a principal waste threat at two onsite locations by the USEPA. The two locations included one test trench location (AT-P-4) and one leachate well (LEACH-P-1). The selected remedy (Alternative P3) included:

- NAPL Collection at Well LEACH-P-1
- Asphalt Cap Over Potentially Mobile Source Area (SA-P-3/AT-P-5)
- Solid Waste Landfill Cap Over Remainder of Identified Waste Area
- Vapor Intrusion Mitigation
- Institutional and Access Controls

Solutia retained responsibility for the NAPL recovery well system, and Ameren took responsibility for the remainder of the remedy. Golder was tasked with designing and implementing the NAPL removal system in coordination with Ameren's activities. In May 2020, Golder found well LEACH-P-1 to be compromised and unable

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to be gauged, and the decision was made to abandon the well and install a replacement following installation of the engineered soil cap. In February 2021, prior to abandonment, Well LEACH-P-1 was surveyed using a Trimble DA1 antenna paired with a tablet with the ArcGIS Collector app and Trimble Catalyst software that is accurate to within 3 centimeters. According to the survey data, the well was located at 38.604478 Latitude and -90.176270 Longitude (38° 36' 16.12" North Latitude and 90° 10' 34.57" West Longitude). Ground surface elevation at the time was measured to be 420.15 feet above mean sea level (ft msl). On April 30, 2021, Golder mobilized to the Site to abandon the well.

As part of the Site P Specific Project Remedial Design Work Plan (SPRDWP), Golder prepared a NAPL Recovery System 30 Percent Design, dated October 18, 2019. The Golder design included general specifications for the proposed replacement LEACH-P-1 NAPL recovery well and system. It should be noted that at the time of submittal of the 30 percent design document, what was thought to be well LEACH-P-1 was found to actually be well SA-P-1. In May 2020, well LEACH-P-1 was located and found to be compromised two to three feet below the top of casing. An email notification regarding the inadvertent misidentification was sent to Stephanie Linebaugh (USEPA) on May 13, 2020. Both SA-P-1 and LEACH-P-1 have been properly abandoned.

As noted in Section 5.1 of GHD's May 25, 2021 *Final 100% Design Report and Response to IEPA and USEPA Comments to 100% Remedial* Design, the replacement well will be in the same location and constructed in the same manner (construction materials, screen length, screen elevation, etc.) as LEACH-P-1. The new well will be gauged once per quarter for one year. If NAPL is observed during gauging, an evaluation of NAPL recoverability (chemical analysis, viscosity, and volume) will be conducted. If pumpable NAPL is present, the product will be manually removed to the extent practical at the time of gauging and properly stored onsite for later disposal. Following completion of four quarters of NAPL gauging, all data and recoverability analysis information will be provided to EPA for review. If no recoverable NAPL is observed, Solutia will propose to abandon the LEACH-P-1 replacement well.

The purpose of this technical memorandum is to present the installation components of the replacement LEACH-P-1 NAPL recovery well, which is intended to recover previously identified "mobile source material", if still present, at this well location. This action is a requirement of Site P Remedial Alternative P3, which is discussed in the Consent Decree for Remedial Design/Remedial Action for Site P of Operable Unit 1 (CD), finalized and dated April 24, 2019.

2.0 DESIGN CRITERIA, COMPONENTS, AND ASSUMPTIONS

The design criteria, components and assumptions used for the replacement recovery well are provided in Golder's NAPL Recovery System 30 Percent Design, dated October 18, 2019 (Attachment 2), as modified to match the Leach-P-1 boring log (Attachment 3). The following sections describe the proposed NAPL recovery well installation activities.

2.1 Recovery Well

2.1.1 Field Preparation and Mobilization

Prior to initiating field work, Golder will review and update the Site-specific Health and Safety Environment Plan (HASEP) that was previously prepared for the Site. The HASEP includes identification of occupational health and safety hazards (risks) related to the field team and Site conditions, specific risk controls, training requirements, personal protective equipment (PPE) requirements, and information on potential emergencies. Golder will also compile all the necessary equipment needed to complete the job, including sample containers, and subcontract

the required drilling, utility locate, and laboratory services. Golder or the drilling subcontractor will contact Illinois "Julie" One Call (811) to locate public underground utilities. At the start of the field program, Golder will meet with Site representatives and hold an onsite kickoff meeting to discuss scope of work, health and safety, and schedule.

2.1.2 Drilling

Golder proposes to advance one 10-inch boring to 24.4 feet below ground surface (ft bgs) using a hollow-stem auger and install a permanent NAPL recovery well, designated LEACH-P-1A. USEPA was previously concerned that use of hollow-stem augers could smear the sides of the borehole, which could inhibit infiltration of NAPL (if present) into the recovery well. However, based on the historic boring log for the original LEACH-P-1, due to the presence of Silt (and little to no Clay) in the well screen interval, the likelihood of creating smearing along the sides of the borehole to the extent that NAPL would not enter the borehole is considered minimal. The proposed depth of 24.4 feet is based on the original well depth of 22 ft bgs plus the newly installed soil cover of 2.4 feet, based on land survey data collected at the LEACH-P-1 location after the new soil cover was placed. Details regarding the former well components and location and proposed new well location are displayed in **Table 1**. The new well location will be within 5 feet of the abandoned recovery well to avoid interference from the previous well components (well pipe, sand pack and bentonite plug). Like the previous recovery well, the new well will include a 10 feet long screened interval. Soil will be logged during drilling using United Soil Classification System (USCS) field classification.

Table 1: Leach-P-1 Well Details

Date	Latitude	Longitude	Ground Surface Elevation (ft msl)	Top of Casing (ft msl)	Stick Up (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Top of Screen (ft msl)	Bottom of Screen (ft msl)
July 25, 2002	NA	NA	422.09	424.69	2.60	12.0	22.0	410.09	400.09
February 19, 2021	38.604478	-90.176270	420.15	422.89	2.74	12.0	22.0	408.15	398.15
March 25, 2022*	38.604479	-90.176267	422.55	~423.15	~0.6	~14.4	~24.4	~408.15	~398.15

Notes:

1) NA - not applicable, ft msl - feet above mean sea level, ft bgs - feet below ground surface
2) July 25, 2002 data generated by others, no latitude and longitude data available on original boring log/well construction form for LEACH-P-1
3) February 19, 2021 and March 25, 2022 data generated by Golder
4) * - Screen depths and elevations are proposed based on ground surface elevation measurements

Upon completion of the well installation, an Illinois Department of Public Health (IDPH) Well Construction Registration Form will be prepared by the driller and submitted to IDPH. Copies of this form will be provided to Ameren and the USEPA in the well installation summary report.

2.1.3 NAPL Recovery Well Construction and Installation

Golder will install one new recovery well within 5 feet of the previous location of LEACH-P-1 per the standards and requirements of 920.170 of the Illinois Water Well Construction Code, including:

- 10-inch diameter borehole drilled to the same elevation as LEACH-P-1, taking the new cover thickness into account
  - Ground elevation at LEACH-P-1 was measured to be 420.15 ft msl before shrub clearing at Site P, and 422.55 ft msl after soil cover placed (**Table 1**)
  - The new borehole will be advanced to approximately 25 ft bgs and backfilled with sand to 24.4 ft bgs, 25 feet of new stainless steel well screen and riser pipe will be installed through the open hollow-stem augers
  - Using the same Trimble DA1 antennae used during the previous Golder field investigations, ground surface elevation and top of casing elevations will be confirmed during installation of LEACH-P-1A to ensure the well is installed as close as possible to the original screen intervals
- 4-inch diameter stainless steel riser and screen to provide room for the proposed NAPL recovery pump and associated conductivity probe (if necessary):
  - 0.010-inch slotted screen
  - Blank riser from top of screen to approximately 12 inches above ground surface
  - Stainless steel flange or corrosion resistant well head connection capable of holding down-hole pump equipment installed at top of well riser
- Filter sand pack from below the screen to 3 feet above the screen
- Annular seal installed from ground surface to filter sand pack

The surface completion around the well will consist of a concrete pad. Three bollards will be installed in a triangular configuration around the well.

2.1.4 NAPL Recovery Well Development

Following installation of LEACH-P-1A, Golder will develop the well using a stainless-steel bailer and/or submersible pump until a minimum of three total borehole volumes have been removed and the groundwater is relatively clear and free of sediment, or until the well is dry. If enough water is present, the well will be purged until groundwater parameters (temperature, pH, specific conductivity, and turbidity) have stabilized and the turbidity is below 10 nephelometric turbidity units (NTUs). Should turbidity values remain above 10 NTUs, the recovery well will be purged until at least five borehole volumes have been removed and three consecutive turbidity readings are within 10%. Golder with gauge the well for NAPL and note any NAPL observed during development. Development may be suspended if significant amounts of NAPL are observed during the development process. After well installation, a professional land surveyor will be needed to survey the location and top of casing elevation of the newly constructed recovery well.

2.1.5 Equipment Decontamination

Equipment decontamination will be conducted in general conformance with ASTM Standard D 5088-15a. The drill rig will be decontaminated before arriving onsite and before departing the Site with particular attention to the working end and downhole equipment (i.e. augers, rods, etc.). Non-dedicated downhole drilling, monitoring and/or sampling equipment will be decontaminated before and after use. Decontamination of downhole drilling equipment

will consist of a high-temperature, high pressure wash. Decontamination of downhole monitoring and/or sampling equipment will consist of washing the equipment in potable water and Alconox® or equivalent solution, followed by a potable water rinse. Decontamination of this equipment, including augers and rods, will be performed at a decontamination area or adjacent to the drill rig. Wastewater generated by the decontamination process will be containerized for proper disposal.

2.1.6 Investigation Derived Waste (IDW) Handling

Investigation derived waste (IDW) will include water, soil, purged groundwater, PPE, and general refuse. Waste disposition will be determined following the receipt of all analytical data. Water IDW and soil IDW will be containerized in 55-gallon drums, labeled, and staged onsite in a predetermined location. Golder will collect one composite sample from the soil IDW drums and one composite sample from the water IDW drums. The soil composite sample will be collected by combining representative aliquots of soil from each drum and compositing. The water IDW sample will be collected from the drums using a bailer or other water sampling method and compositing.

2.1.7 Sample Handling and Laboratory Analysis

IDW soil and groundwater samples will be collected directly into laboratory-supplied, labeled containers, and then packed in a cooler with ice to maintain a temperature of approximately four degrees Celsius. All analytical samples will be properly labeled as to date and time of collection, sampler's initials, analyses to be performed, preservative(s) used, and project name. This information will then be logged on a chain-of-custody form. Sample coolers will be shipped to the analytical laboratory under chain-of-custody protocol for analysis. A 10-day laboratory turnaround time will be requested. Samples will be analyzed using at a minimum the following procedures:

- Toxicity Characteristics Leaching Procedure (TCLP) Volatile Organic Compounds (VOCs) via USEPA Methods 1311 and 8260
- TCLP Semi-Volatile Organic Compounds (SVOCs) via USEPA Methods 1311 and 8270
- TCLP RCRA Metals via USEPA Methods 1311, 6010, and 7470/7471
- PCBs via USEPA Method 8082

2.2 NAPL Monitoring

Golder will mobilize to the Site during the second quarter of 2022 to monitor for NAPL in the well. This event will occur at least two weeks following well installation and development. The field investigation will consist of the following activities:

- Observe and note the condition of the well, well pad, and surrounding area
- Measure volatile organic compound concentrations in the background air and at the well head using a photoionization detector (PID)
- Measure and record total depth and depth to water to the nearest 0.01 foot using an electronic oil-water interface meter
- Use a bailer to collect water/liquid from the top of the water column and the bottom of the well to visually inspect for the presence or absence of NAPL

2.3 Reporting

Following completion of one year of quarterly gauging (and NAPL recovery, as appropriate), Golder will prepare a letter report documenting all activities. The report will be distributed as specified in Section XX of the CD. The report will include a description of field activities, boring and well construction logs, tabulated IDW data, appendices containing all “raw” data, a summary of the results, a summary of potential free product at the Site, and recommendations for next steps. Results of quarterly gauging activities associated with Leach-P-1A will be presented in tables and graphs, including hydrographs and NAPL thickness measurements. Laboratory analytical results will be compared to the relevant screening levels, as specified by the Illinois Environmental Protection Agency (IEPA), to determine proper IDW disposition.

The borehole for LEACH-P-1A will be logged during drilling. The soil boring log will include visual observations of potential product, as well as photoionization detector readings and soil moisture conditions.

As previously approved, Solutia proposes to update the 30% NAPL Recovery System design only if pumpable NAPL is identified in the new well. These updates will include the depth and screen length of the new NAPL recovery well. The existing 30% design lays out the approximate relationship between the recovery well and the NAPL recovery system building. The drawing set will be updated with a Site Plan showing the proposed orientation of the well and treatment building in relation to the existing gravel roadway through the middle of Site P.

3.0 HEALTH AND SAFETY

Golder is committed to helping our employees, subcontractors, clients, and the public remain safe and healthy and to the prevention of injury and illness. Our motto is “work safe, home safe”. No job or task is more important than a person’s health and safety or the protection of the environment. To meet these objectives, Golder employees and subcontractors will prepare a Health Safety and Environment Plan (HASEP) prior to mobilizations and field work to ensure safe work practices.

This Work Plan has taken into consideration certain efforts required due to the COVID-19 pandemic, but it is acknowledged that the full impacts of the COVID-19 pandemic are ever changing. The scope of services and schedule do not consider additional potential impacts caused by COVID-19, beyond what has been described in the Work Plan. Any adjustments required due to any additional impacts to accommodate COVID-19 related concerns (including but not limited to, additional travel restrictions, delays, economic interruption, supply chain issues, or any governmental guidance) will require an equitable adjustment in scope and/or schedule.

4.0 SCHEDULE

Golder anticipates installing the NAPL recovery well in the first quarter of 2022, upon approval by the USEPA and receipt of authorization to proceed from Solutia Inc.

5.0 CLOSING

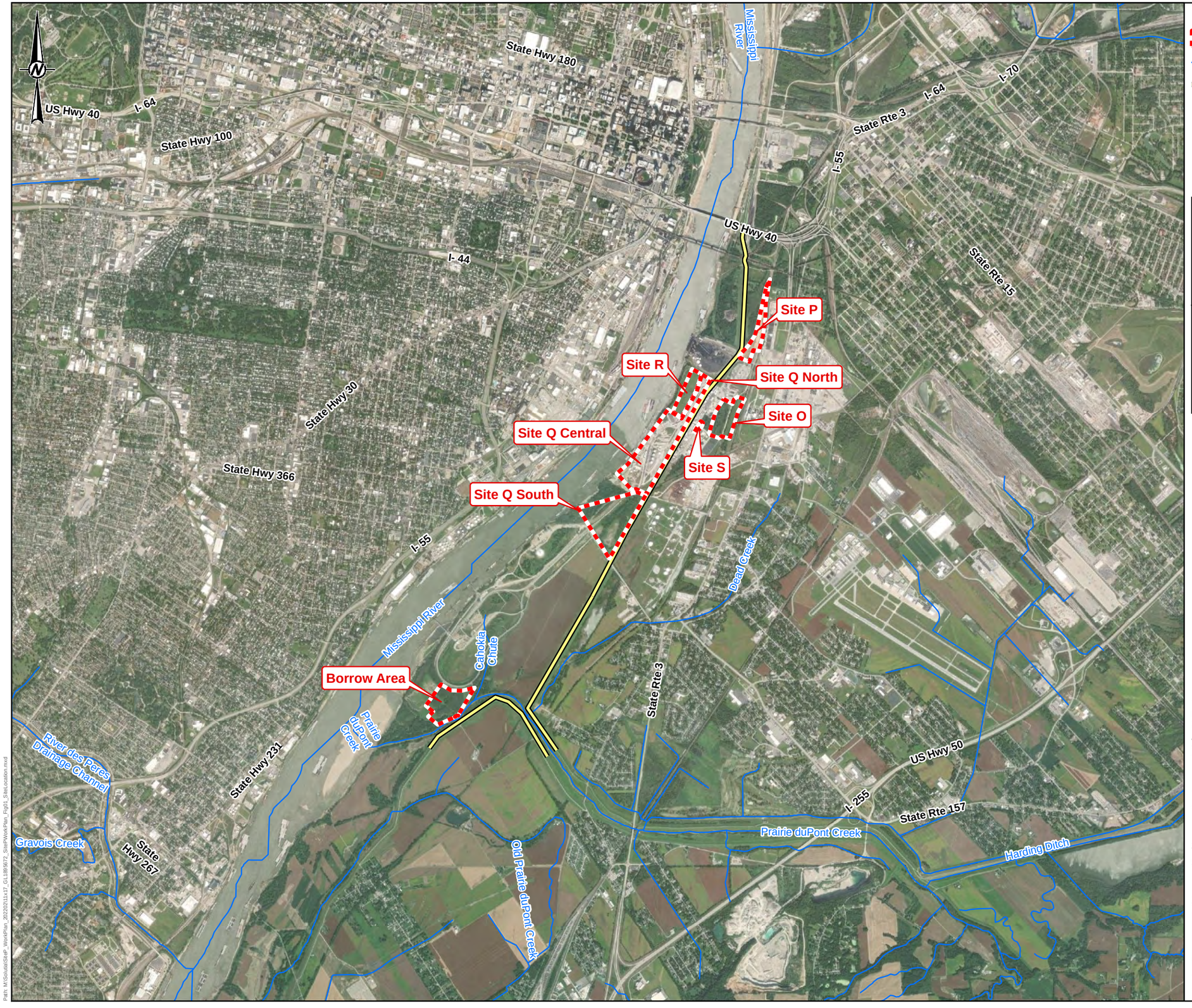
Golder appreciates the opportunity to provide Solutia with this Work Plan. Golder looks forward to implementing this Work Plan with Solutia as this project progresses. Please contact the undersigned with any questions.

Golder Associates USA Inc.

Rahel Pommerenke
Environmental Engineer

Chris Redington
Associate & Senior Consultant

Attachment 1: Site P Figures (2 Sheets)
Attachment 2: Golder 30% Design Drawing Set including Recovery Well Diagram (3 Sheets)
Attachment 3: Original LEACH-P-1 Boring Log and Well Construction (1 Sheet)



LEGEND

- APPROXIMATE SITE LIMITS
- STREAM/RIVER
- LEVEE AREA

KEY MAP

0 2,000 4,000 8,000 Feet

REFERENCE

1. AERIAL IMAGERY: ESRI PROVIDED BASEMAP SERVICE. METRO. MAXAR. IMAGERY COLLECTED 08/19/2020.
2. STREAMS DATASET: NATIONAL HYDROGRAPHY DATASET (NHD), USGS.

CLIENT
SOLUTIA, INC.

PROJECT
SAUGET AREA 2 SUPERFUND SITE

TITLE
SITE LOCATION MAP

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-08
PREPARED	RHG
DESIGN	RHG
REVIEW	RSP
APPROVED	CMR

PROJECT No.
31404150

FIGURE
1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 0 1in

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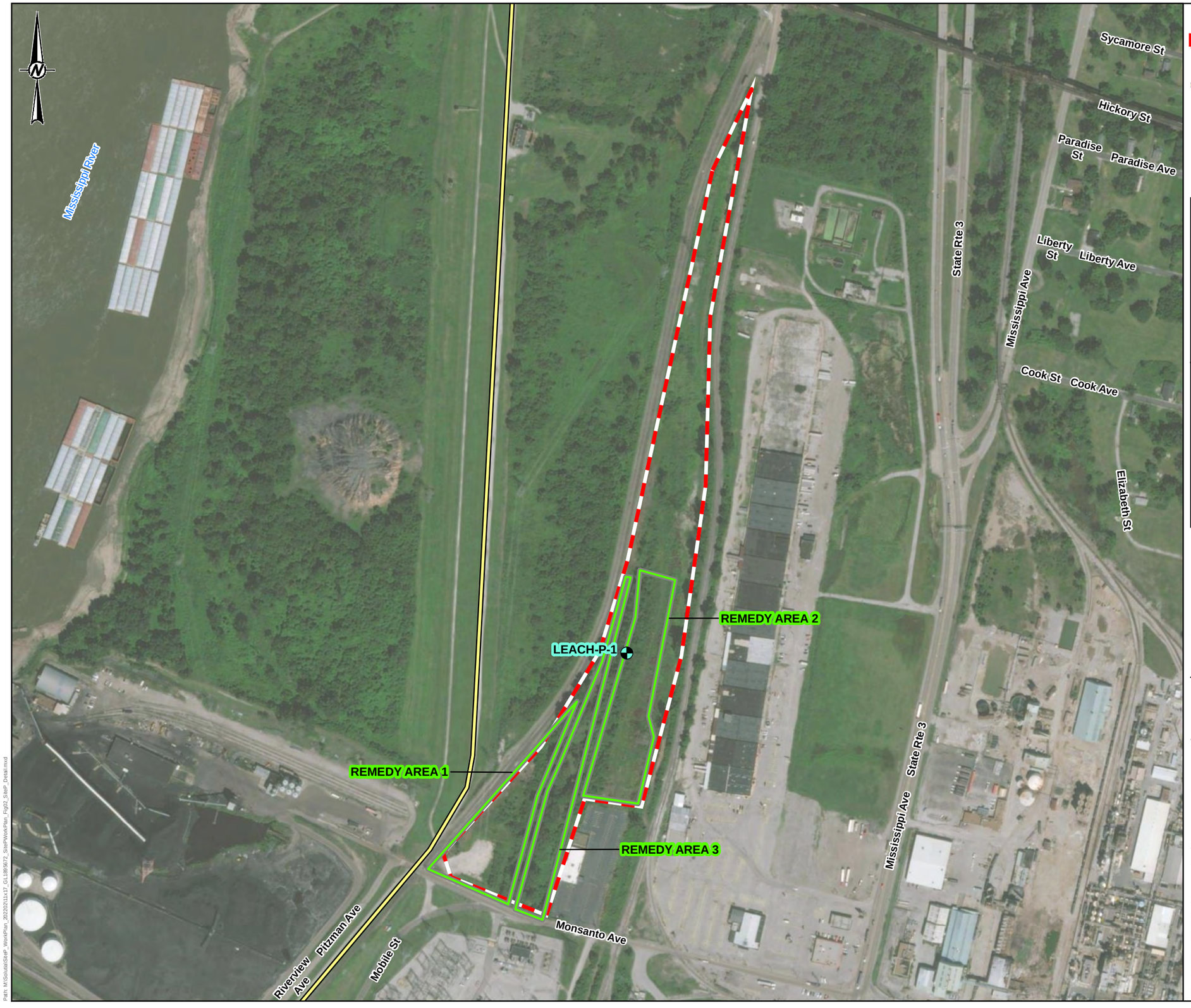
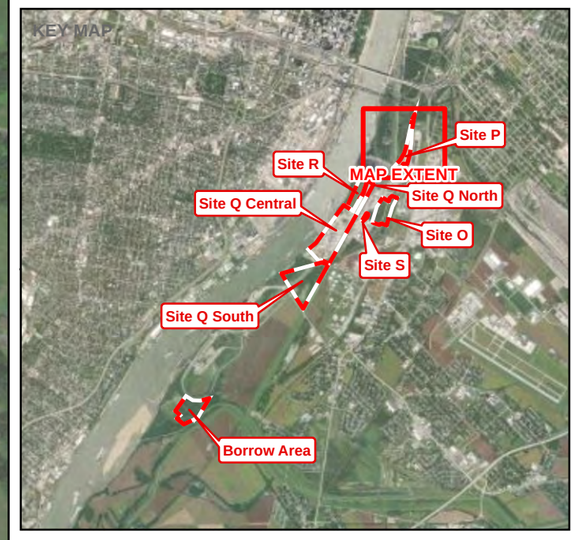


LEGEND

- APPROXIMATE SITE LIMITS
- SITE P REMEDY AREAS
- LEVEE AREA



0 200 400 800 Feet

NOTES

1. SELECTED REMEDY AREAS ARE SHOWN AS DEPICTED IN THE 2013 RECORD OF DECISION.
2. WELL LEACH P-1 WAS ABANDONED IN PLACE BY GOLDER ASSOCIATES ON APRIL 30, 2021 AND WILL BE REPLACED IN 2022.

REFERENCE

1. AERIAL IMAGERY: ESRI PROVIDED BASEMAP SERVICE. METRO. MAXAR. IMAGERY COLLECTED 08/19/2020.

CLIENT
SOLUTIA, INC.

PROJECT
SAUGET AREA 2 SUPERFUND SITE

TITLE
SITE P - DETAILED SITE MAP

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-02-08
PREPARED	RHG
DESIGN	RHG
REVIEW	RSP
APPROVED	CMR

PROJECT No.
31404150

FIGURE
2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 1 in 0

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NAPL RECOVERY SYSTEM - 30 PERCENT DESIGN
SAUGET AREA 2 - SITE P
SOLUTIA INC.

PLANS PREPARED FOR:

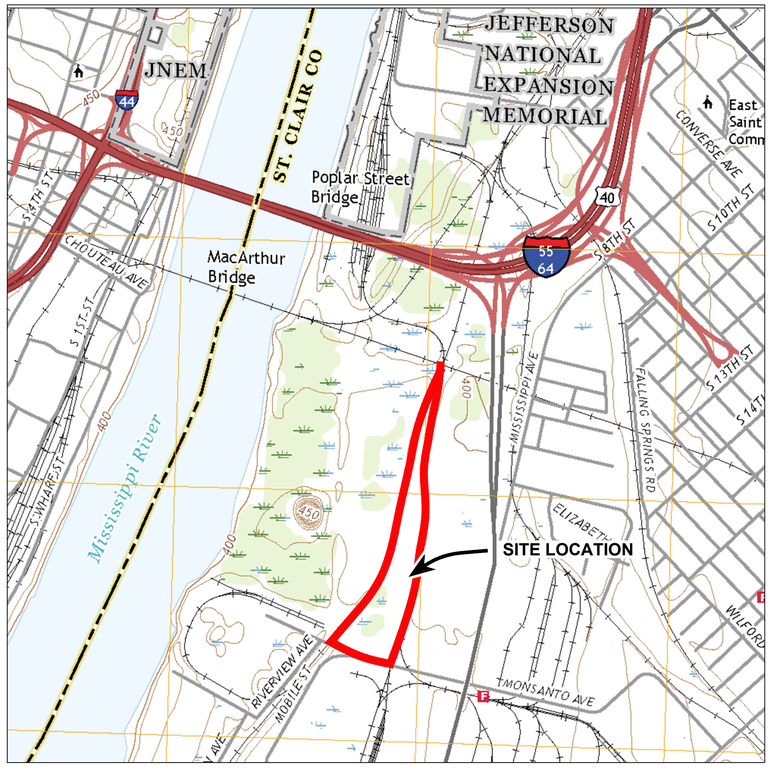
SOLUTIA INC.

PLANS PREPARED BY

GOLDER ASSOCIATES INC.
13515 BARRETT PARKWAY DRIVE, SUITE 260
BALLWIN, MISSOURI 63021

DESIGN ENGINEER CONTACT

MARK HADDOCK, P.E.
PHONE: +1 (314) 984-8800



USGS TOPOGRAPHIC MAP, 7.5 MINUTE SERIES QUADRANGLE CAHOKIA, IL, MO 2018

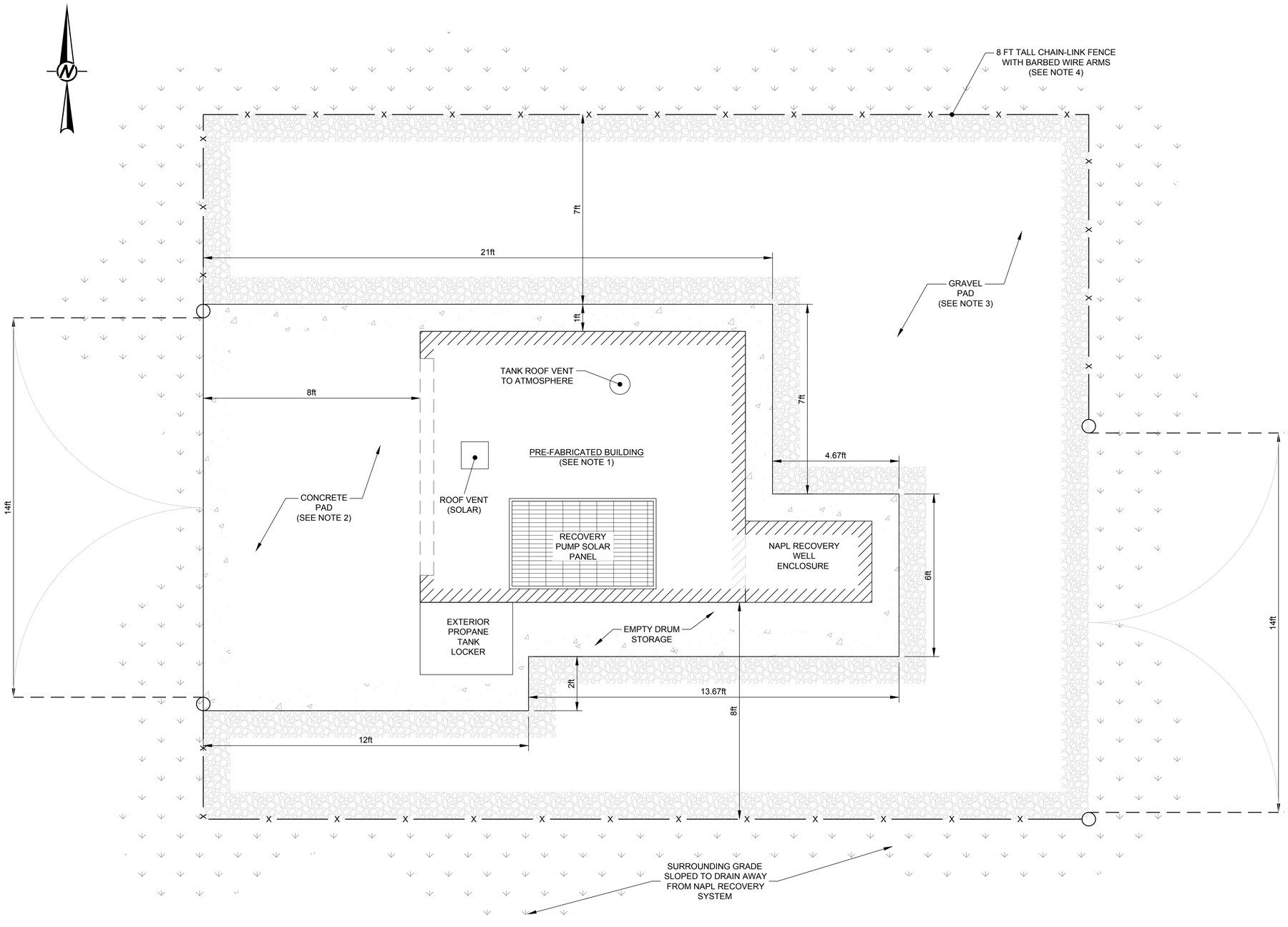
SITE LOCATION MAP

0 1000 2000
1" = 1000' FEET

INDEX OF DRAWINGS

NOT FOR CONSTRUCTION
30% DESIGN

GOLDER



NOTES

1. PREFABRICATED BUILDING

TO HOUSE THE NAPL RECOVERY PUMP, PRODUCT TOTE AND ASSOCIATED EQUIPMENT, A PREFABRICATED BUILDING INCLUDING THE FOLLOWING COMPONENTS IS PROPOSED:

- BUILDING TO CONSIST OF APPROXIMATELY 10-FT X 12-FT PREFABRICATED BUILDING WITH INSULATION ON STRUCTURAL PANELS
- SOLAR-POWERED INTERIOR AND EXTERIOR LIGHTING
- BUILDING TO HAVE MANUALLY OPERATED (APPROXIMATELY 8-FT WIDE X 7-FT TALL) ROLL-UP DOOR TO ALLOW ACCESS OF MACHINERY TO PLACE AND REMOVE PRODUCT STORAGE TOTE, PRODUCT STORAGE TOTE SECONDARY CONTAINMENT, AND 55-GALLON STEEL DRUMS AS APPLICABLE (DOOR TO HAVE AN EXTERIOR LOCK)
- SOLAR-POWERED VENTILATION FAN FOR SUMMER MONTHS
- THERMOSTAT-CONTROLLED, 10,000 BTU PROPANE HEATER WITH PROPANE TANKS ENCLOSED IN OUTDOOR SAFETY LOCKER (ULINE H-5656 VERTICAL LOCKER OR APPROVED EQUIVALENT)
- BUILDING TO HAVE WALL VENTS WITH RAIN HOODS FOR VENTILATION (NOT SHOWN)
- ROOF VENT FOR PRODUCT TOTE
- BUILDING TO BE CONSTRUCTED ON A CONCRETE PAD.
- BUILDING TO HAVE AN OPENING ALLOWING THE ATTACHING AND REMOVAL OF A SMALL INSULATED WOOD OUTBUILDING (NAPL RECOVERY WELL ENCLOSURE) LARGE ENOUGH TO FIT OVER THE RECOVERY WELL HEAD, AND SMALL ENOUGH TO BE REMOVABLE
- NAPL RECOVERY WELL ENCLOSURE TO COVER THE TOP OF THE WELL HEAD AND TIE INTO THE PREFABRICATED BUILDING SUCH AS TO PROVIDE PROTECTION OF DISCHARGE PIPES AND WIRING AND TO PROVIDE SHARED HEATING, WELL ENCLOSURE PANELS TO BE REMOVABLE FROM BUILDING TO ALLOW FOR MAINTENANCE

2. CONCRETE PAD

- CONCRETE PAD TO BE A MINIMUM OF 6 INCHES OF FIBER-REINFORCED CONCRETE
- CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI
- SLOPE TO DRAIN AWAY FROM BUILDING

3. GRAVEL PAD

- UNDERLAIN WITH 6-OZ GEOTEXTILE FABRIC
- 6-INCH THICK GRAVEL SLOPED TO DRAIN AWAY FROM BUILDING AT A MINIMUM OF 1%
- GRAVEL TO BE A $\frac{1}{2}$" TO $\frac{3}{4}$" STONE

4. PERIMETER FENCE

- 8-FOOT TALL
- GALVANIZED METAL POSTS WITH CONCRETE FOOTINGS WITH DEPTHS EXCEEDING THE FROST LINE
- CHAIN-LINK
- BARBED WIRE ARMS ON TOP
- TWO 14-FT WIDE SWING-OUT GATES ON EITHER SIDE TO ALLOW ACCESS TO THE RECOVERY WELL AND TO THE BUILDING AND ROLL-UP DOOR

NOT FOR CONSTRUCTION

30% DESIGN

0 2 4
1" = 2' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
A	2019-03-01	ORIGINAL	PJJ	PJJ	JCW	CMR

CLIENT
SOLUTIA INC.

CONSULTANT
GOLDER ASSOCIATES INC.
13515 BARRETT PARKWAY DRIVE
SUITE 260
BALLWIN, MISSOURI, USA 63021
[+1] (314) 984 8800
www.golder.com

PROJECT
NAPL RECOVERY SYSTEM DESIGN - 30%
SAUGET AREA 2 - SITE P

TITLE
NAPL RECOVERY SYSTEM PLAN & NOTES

PROJECT NO. 1895672 | REV. A | of | SHEET 2

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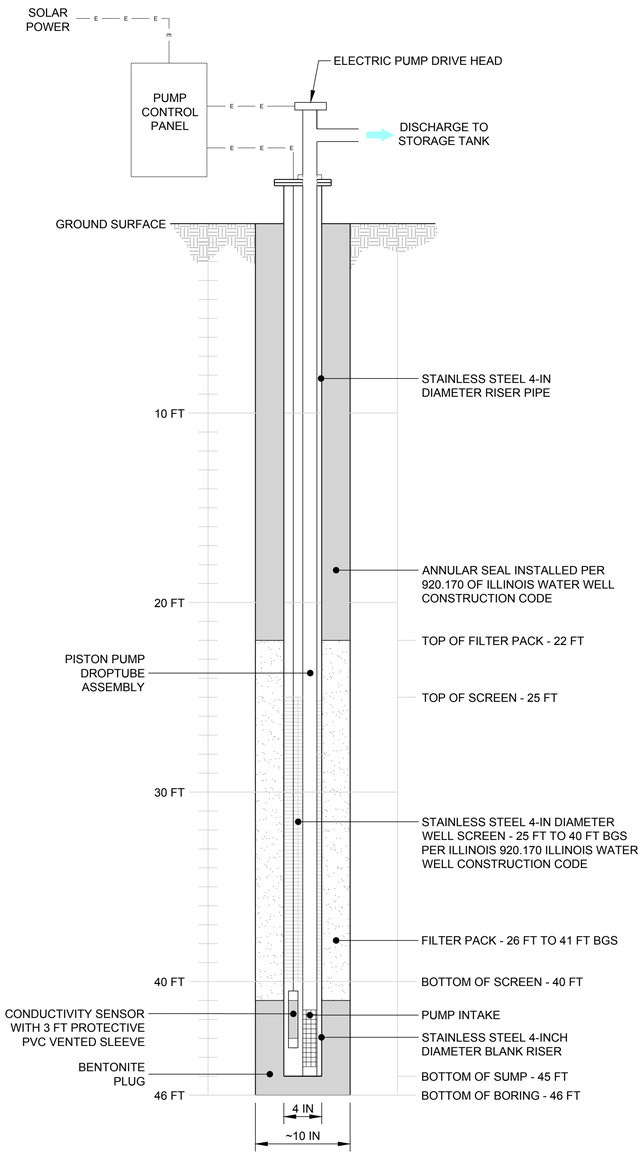
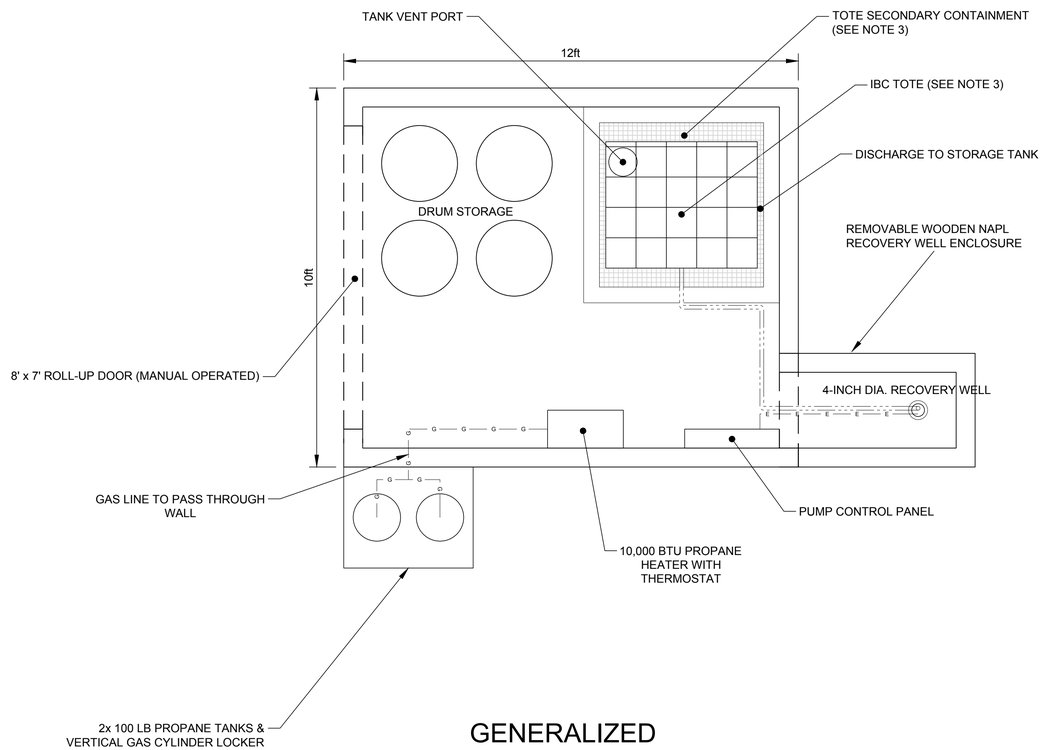


RECOVERY WELL DETAIL

- NOT TO SCALE -



GENERALIZED BUILDING FLOOR PLAN

0 2 4
1" = 2' FEET

NOTES

1. NEW RECOVERY WELL CONSTRUCTION
- 10-INCH DIAMETER BOREHOLE DRILLED TO APPROXIMATELY 46 FT BELOW GROUND SURFACE (BGS)
- 4-INCH DIAMETER STAINLESS STEEL RISER AND SCREEN TO PROVIDE ROOM FOR THE PROPOSED NAPL RECOVERY PUMP AND ASSOCIATED CONDUCTIVITY PROBE
  - BLANK RISER SUMP FROM 40 FT TO 45 FT BGS
  - 0.010-INCH SLOTTED SCREEN FROM 25 FT TO 40 FT BGS
  - BLANK RISER FROM 25 FT BGS TO APPROXIMATELY 18 INCHES ABOVE GROUND SURFACE
  - FLANGED CONNECTION INSTALLED AT TOP OF WELL RISER
- BENTONITE PLUG FROM 41 FT TO 46 FT BGS
- FILTER SAND PACK FROM 22 FT TO 41 FT
- ANNULAR SEAL INSTALLED FROM GROUND SURFACE TO 22 FT BGS

2. NAPL PUMP SYSTEM
- QED LEP 1507-S ELECTRIC PISTON PUMP (SOLAR VERSION) OR APPROVED EQUIVALENT
- QED CONDUCTIVITY PROBE HOUSED IN 1-INCH SLOTTED STILLING PIPE TO INDICATE THE PRESENCE OF NAPL FOR PUMP ACTUATION
- QED PUMP CONTROLLER (SOLAR VERSION) OR SIMILAR WITH HIGH FLUID LEVEL SHUT-OFF SENSOR
- PUMP DISCHARGE PIPE EXTENDING FROM RECOVERY WELLHEAD TO PRODUCT STORAGE TOTE, INCLUDING QUICK CONNECT FITTINGS
- PUMP MANUFACTURER-SUPPLIED SOLAR ARRAY (ROOF MOUNTABLE) WITH CAPACITY TO POWER ELECTRIC PISTON PUMP AND CONTROL PANEL

3. NAPL RECOVERY TOTE
- RECOVERED PRODUCT TOTE TO BE A ULINE H-3886 IBC TANK WITH 275-GALLON CAPACITY OR APPROVED EQUIVALENT
- TOTE TO BE INSTALLED ON A SPILL CONTAINMENT PALLET, ULTRATECH IBC SPILL PALLET PLUS 1158, OR APPROVED EQUIVALENT
- TOTE TO HAVE A PORT FOR ATMOSPHERIC ROOF VENT
- TOTE TO HAVE AN NPT INLET FITTING
- TOTE TO HAVE A LEVEL INSPECTION PORT
- TOTE TO ACCOMMODATE HIGH-LEVEL FLOAT SWITCH WIRED TO THE PUMP CONTROLLER

NOT FOR CONSTRUCTION

30% DESIGN

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
A	2019-03-01	ORIGINAL	PJJ	PJJ	JCW	CMR

CLIENT
SOLUTIA INC.

CONSULTANT
GOLDER
GOLDER ASSOCIATES INC.
13515 BARRETT PARKWAY DRIVE
SUITE 260
BALLWIN, MISSOURI, USA 63021
[+1] (314) 984 8800
www.golder.com

PROJECT
NAPL RECOVERY SYSTEM DESIGN - 30%
SAUGET AREA 2 - SITE P

TITLE
DETAILS & NOTES

PROJECT NO. 1895672 | REV. A | of | SHEET 3

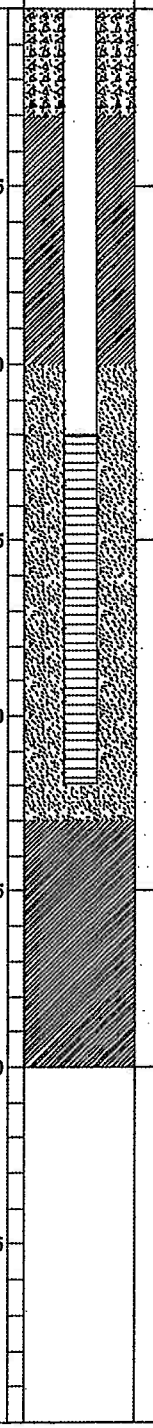
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

0 1 in

Path: C:\Users\pjoplin\Desktop\Peter's Common Drive\1895672 - Solutia NAPL Recovery System\800 - DRAFTING\PRODUCTION\ | File Name: 1895672F002.dwg | Last Edited By: pjoplin Date: 2019-03-01 Time:1:26:05 PM | Printed By: PJoplin Date: 2019-03-01 Time:1:26:17 PM

LOG OF BORING AND WELL CONSTRUCTION DETAIL
Leach-P-1

Completion Date: 7/25/02
Casing Elevation: 424.69
Ground Elevation: 422.09



Depth In feet	Inches Driven	Inches Recovered	PID (ppm)	USCS	DESCRIPTION	NOTES
0	60	48	0.2	FILL	Dark brown to black SILT with wood chips and cinders - FILL (FILL)	Trash and solvent like odors
5			2.2		Grading with gravel	
10	120	96	5.7		Grading with red brick fragments and little clay	
15			1.0			
20	120	120	0.2		▽	
			0.0	CL	Stiff,moist,dark gray Silty CLAY - Silty CLAY (CL)	
				ML	Brown,wet Clayey SILT- Clayey SILT (ML)	
25	60	0	0.0	SM	Loose,wet,brown Silty SAND - Silty SAND (SM)	
30					Boring terminated at 30' bgs. Installed 2" monitoring well at 22' bgs.	
35						

Completion Depth: 30.00 Ft.
Project No.: 21560888
Project Name: Sauget Area 2
Drilling Contractor: Pro-Sonic
Drilling method: Roto-Sonic Drill
Logged by: Eric Fritsch

Water Depth: 24 ft., After ATD hrs.
Water Depth: ____ ft., After ____ hrs.
▽ Water level at time of drilling
▼ Water level after drilling
■ 3" Clear Acetate Liner
▥ Splitspoon Sampler.
◧ Roto Sonic-3" Core Barrel
ATD - At time of drilling
☒ Geoprobe Macro Sampler
Unified Soil Classification based on field visual observations.

URS

URS (ENVIRON) LOG+1 WELL 20010024.GPJ URSSTLEV.GDT 11/25/03